

APPENDIX A. DISCUSSION OF NRC LICENSE RENEWAL NATIONAL ENVIRONMENTAL POLICY ACT ISSUES

Nine Mile Point Nuclear Station, LLC (NMPNS) has prepared this *Environmental Report - Operating License Renewal Stage; Nine Mile Point* in accordance with the requirements of U.S. Nuclear Regulatory Commission (NRC) regulation 10 CFR 51.53. The NRC included in the regulation a list of National Environmental Policy Act issues for license renewal of nuclear power plants. Table A-1 lists these 92 issues with assigned categorization and identifies where NMPNS addressed each issue in the environmental report. A cross-reference to the section in the NRC's *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* containing the NRC's generic analysis is also presented for the issues applicable to Nine Mile Point Units 1 & 2 license renewal. For expediency, NMPNS has assigned a number to each issue and uses the issue numbers throughout the environmental report.

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TABLE A-1

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Issue^a	Category^a	Section of this Environmental Report	Unit Applicability	GEIS Cross Reference^b (Section/Page)
1. Impacts of refurbishment on surface water quality	1	4.1		3.4.1/3-4 ^c
2. Impacts of refurbishment on surface water use	1	4.1		3.4.1/3-4 ^c
3. Altered current patterns at intake and discharge structures	1	4.1	Both	4.2.1.2.1/4.4 4.3.2.2/4-31
4. Altered salinity gradients	1	NA ^d		
5. Altered thermal stratification of lakes	1	4.1	Both	4.2.1.2.3/4-6 4.3.2.2/4-31
6. Temperature effects on sediment transport capacity	1	4.1	Both	4.2.1.2.3/4-6 4.3.2.2/4-31
7. Scouring caused by discharged cooling water	1	4.1	Both	4.2.1.2.3/4-6 4.3.2.2/4-31
8. Eutrophication	1	4.1	Both	4.2.1.2.3/4-6 4.3.2.2/4-31
9. Discharge of chlorine or other biocides	1	4.1	Both	4.2.1.2.4/4-10 4.3.2.2/4-31
10. Discharge of sanitary wastes and minor chemical spills	1	4.1	Both	4.2.1.2.4/4-10 4.3.2.2/4-31
11. Discharge of other metals in waste water	1	4.1	Both	4.2.1.2.4/4-10 4.3.2.2/4-31
12. Water use conflicts (plants with once-through cooling systems)	1	4.1	Unit 1	4.2.1.3/4-13

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Issue^a	Category^a	Section of this Environmental Report	Unit Applicability	GEIS Cross Reference^b (Section/Page)
13. Water use conflicts (plants with cooling ponds or cooling towers using makeup water from a small river with low flow)	2	NA ^e		
14. Refurbishment impacts to aquatic resources	1	4.1		3.5/3-5 ^c
15. Accumulation of contaminants in sediments or biota	1	4.1	Both	4.2.1.2.4/4-10 4.3.3/4-33
16. Entrainment of phytoplankton and zooplankton	1	4.1	Both	4.2.2.1.1/4-15 4.3.3/4-33
17. Cold shock	1	4.1	Both	4.2.2.1.5/4-18 4.3.3/4-33
18. Thermal plume barrier to migrating fish	1	4.1	Both	4.2.2.1.6/4-19 4.3.3/4-33
19. Distribution of aquatic organisms	1	4.1	Both	4.2.2.1.6/4-19 4.3.3/4-33
20. Premature emergence of aquatic insects	1	4.1	Both	4.2.2.1.7/4-20 4.3.3/4-33
21. Gas supersaturation (gas bubble disease)	1	4.1	Both	4.2.2.1.8/4-21 4.3.3/4-33
22. Low dissolved oxygen in the discharge	1	4.1	Both	4.2.2.1.9/4-23 4.3.3/4-33
23. Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses	1	4.1	Both	4.2.2.1.10/4-24 4.3.3/4-33

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Issue^a	Category^a	Section of this Environmental Report	Unit Applicability	GEIS Cross Reference^b (Section/Page)
24. Stimulation of nuisance organisms (e.g., shipworms)	1	4.1	Both	4.2.2.1.11/4-25 4.3.3/4-33
25. Entrainment of fish and shellfish in early life stages for plants with once-through and cooling pond heat dissipation systems	2	4.2	Unit 1	4.2.2.1.2/4-16
26. Impingement of fish and shellfish for plants with once-through and cooling pond heat dissipation systems	2	4.3	Unit 1	4.2.2.1.3/4-16
27. Heat shock for plants with once-through and cooling pond heat dissipation systems	2	4.4	Unit 1	4.2.2.1.4/4-17
28. Entrainment of fish and shellfish in early life stages for plants with cooling-tower-based heat dissipation systems	1	4.1	Unit 2	4.3.3/4-33
29. Impingement of fish and shellfish for plants with cooling-tower-based heat dissipation systems	1	4.1	Unit 2	4.3.3/4-33
30. Heat shock for plants with cooling-tower-based heat dissipation systems	1	4.1	Unit 2	4.3.3/4-33

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Issue^a	Category^a	Section of this Environmental Report	Unit Applicability	GEIS Cross Reference^b (Section/Page)
31. Impacts of refurbishment on groundwater use and quality	1	4.1		3.4.2/3-5 ^c
32. Groundwater use conflicts (potable and service water; plants that use < 100 gpm)	1	NA ^f		
33. Groundwater use conflicts (potable, service water, and dewatering; plants that use > 100 gpm)	2	4.5	Unit 2	4.8.1.2/4-117
34. Groundwater use conflicts (plants using cooling towers withdrawing makeup water from a small river)	2	NA ^e		
35. Groundwater use conflicts (Ranney wells)	2	NA ^g		
36. Groundwater quality degradation (Ranney wells)	1	NA ^g		
37. Groundwater quality degradation (saltwater intrusion)	1	NA ^h		
38. Groundwater quality degradation (cooling ponds in salt marshes)	1	NA ^{h,i}		
39. Groundwater quality degradation (cooling ponds at inland sites)	2	NA ⁱ		

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40. Refurbishment impacts to terrestrial resources	2	4.6 ^j		3.6/3-6 ^c
41. Cooling tower impacts on crops and ornamental vegetation	1	4.1	Unit 2	4.3.4/4-34
42. Cooling tower impacts on native plants	1	4.1	Unit 2	4.3.5.1/4-42
43. Bird collisions with cooling towers	1	4.1	Unit 2	4.3.5.2/4-45
44. Cooling pond impacts on terrestrial resources	1	NA ⁱ		
45. Power line right-of-way management (cutting and herbicide application)	1	4.1	Both	4.5.6.1/4-71
46. Bird collisions with power lines	1	4.1	Both	4.5.6.2/4-74
47. Impacts of electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, livestock)	1	4.1	Both	4.5.6.3/4-77
48. Floodplains and wetlands on power line right-of-way	1	4.1	Both	4.5.7/4-81
49. Threatened or endangered species	2	4.7	Both	3.9/3-48 ^c 4.1/4-1
50. Air quality during refurbishment (nonattainment and maintenance areas)	2	4.8 ^j		3.3/3-2 ^c

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Issue^a	Category^a	Section of this Environmental Report	Unit Applicability	GEIS Cross Reference^b (Section/Page)
51. Air quality effects of transmission lines	1	4.1	Both	4.5.2/4-62
52. Onsite land use	1	4.1	Both	3.2/3-1 ^c
53. Power line right-of-way land-use impacts	1	4.1	Both	4.5.3/4-62
54. Radiation exposures to the public during refurbishment	1	4.1		3.8.1 ^c /3-27
55. Occupational radiation exposures during refurbishment	1	4.1		3.8.2 ^c /3-42
56. Microbiological organisms (occupational health)	1	4.1	Both	4.3.6/4-48
57. Microbiological organisms (public health) (plants using cooling ponds, lakes, or canals that discharge to a small river)	2	NA ^{d,e,i}		
58. Noise	1	4.1	Both	4.3.7/4-49
59. Electromagnetic fields, acute effects (electric shock)	2	4.9	Both	4.5.4.1/4-66
60. Electromagnetic fields, chronic effects	NA ^k	4.1	Both	4.5.4.2/4-67
61. Radiation exposures to public (license renewal term)	1	4.1	Both	4.6.2/4-87
62. Occupational radiation exposures (license renewal term)	1	4.1	Both	4.6.3/4-95

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63. Housing impacts	2	4.10	Both	3.7.2/3-10 ^c 4.7.1/4-101
64. Public services: public safety, social services, and tourism and recreation	1	4.1	Both	3.7.4/3-14 ^c 4.7.3/4-104
65. Public services: public utilities	2	4.11	Both	3.7.4.5/3-19 ^c 4.7.3.5/4-107
66. Public services, education (refurbishment)	2	4.12 ^j		3.7.4.1/3-15 ^c
67. Public services, education (license renewal term)	1	4.1	Both	4.7.3.1/4-106
68. Offsite land use (refurbishment)	2	4.13.1 ^j		3.7.5/3-20 ^c
69. Offsite land use (license renewal term)	2	4.13.2	Both	4.7.4/4-107
70. Public services, transportation	2	4.14	Both	3.7.4.2/3-17 ^c 4.7.3.2/4-106
71. Historic and archaeological resources	2	4.15	Both	3.7.7/3-23 ^c 4.7.7/4-114
72. Aesthetic impacts (refurbishment)	1	4.1		3.7.8 ^c /3-24
73. Aesthetic impacts (license renewal term)	1	4.1	Both	4.7.6/4-111
74. Aesthetic impacts of transmission lines (license renewal term)	1	4.1	Both	4.5.8/4-83

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75. Design basis accidents	1	4.1	Both	5.3.2/5-11 5.5.1/5-114
76. Severe accidents	2	4.16	Both	5.3.3/5-12 5.4/5-106 5.5.2/5-114
77. Offsite radiological impacts (individual effects from other than the disposal of spent fuel and high-level radioactive waste)	1	4.1	Both	6.2.4/6-27 6.6/6-87
78. Offsite radiological impacts (collective effects)	1	4.1	Both	6.2.4/6-27 6.6/6-88
79. Offsite radiological impacts (spent fuel and high-level radioactive waste disposal)	1	4.1	Both	6.2.4/6-28 6.6/6-88
80. Nonradiological impacts of the uranium fuel cycle	1	4.1	Both	6.2.2.6/6-20 6.2.2.7/6-20 6.2.2.8/6-21 6.2.2.9/6-21 6.6/6-90
81. Low-level radioactive waste storage and disposal	1	4.1	Both	6.4.2/6-36 6.4.3/6-37 6.4.4/6-48 6.6/6-90
82. Mixed waste storage and disposal	1	4.1	Both	6.4.5/6-63 6.6/6-91
83. Onsite spent fuel	1	4.1	Both	6.4.6/6-70 6.6/6-91
84. Nonradiological waste	1	4.1	Both	6.5/6-86 6.6/6-92

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85. Transportation	1	4.1	Both	Addendum 1 (Ref. A-2)
86. Radiation doses (decommissioning)	1	4.1	Both	7.3.1/7-15 7.4/7-25
87. Waste management (decommissioning)	1	4.1	Both	7.3.2/7-19 7.4/7-25
88. Air quality (decommissioning)	1	4.1	Both	7.3.3/7-21 7.4/7-25
89. Water quality (decommissioning)	1	4.1	Both	7.3.4/7-21 7.4/7-25
90. Ecological resources (decommissioning)	1	4.1	Both	7.3.5/7-21 7.4/7-25
91. Socioeconomic impacts (decommissioning)	1	4.1	Both	7.3.7/7-24 7.4/7-25
92. Environmental justice	NA ^k	4.17	Both	Not addressed in GEIS

a. Source: 10 CFR 51, Subpart A, Appendix B, Table B-1 (Issue numbers added to facilitate discussion).

b. Source: Ref. A-1.

c. NRC findings are not applicable because NMPNS has no plans for major refurbishment.

d. Not applicable because NMP Units 1 & 2 discharge to a large freshwater lake.

e. Not applicable because NMP Units 1 & 2 are not located on a small river.

f. Not applicable because the NMP site uses potable water from a municipal source and service water from Lake Ontario.

g. Not applicable because NMP Units 1 & 2 do not use Ranney wells.

h. Not applicable because the NMP site is not located in a coastal area.

i. Not applicable because NMP Units 1 & 2 do not use cooling ponds.

j. Section included in report though NMPNS plans no refurbishment activities.

k. Not applicable. Regulation does not categorize this issue.

GEIS = *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*

NA = Not applicable

NEPA = National Environmental Policy Act

NMP = Nine Mile Point NMPNS = Nine Mile Point Nuclear Station, LLC

NRC = U.S. Nuclear Regulatory Commission

Ref. = Reference

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A.1 REFERENCES

- A-1 U.S. Nuclear Regulatory Commission. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*. NUREG-1437. Office of Nuclear Regulatory Research. Washington, D.C. May 1996.
- A-2 U.S. Nuclear Regulatory Commission. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*. Section 6.3, "Transportation," and Table 9.1, "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants." NUREG-1437, Vol. 1, Addendum 1. Office of Nuclear Reactor Regulation. Washington, D.C. August 1999.